



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,464	10/22/2002	Mark A. Lillis	PES-0077	5642
23462	7590	12/13/2006		
CANTOR COLBURN, LLP - PROTON 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER WILLS, MONIQUE M	
			ART UNIT	PAPER NUMBER

1745

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/065,464

Applicant(s)

LILLIS, MARK A.

Examiner

Monique M. Wills

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-5, 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-5, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

This Office Action is responsive to the Amendment filed September 28, 2006. The rejection of claim 5 under 35 U.S.C. 112 second paragraph is overcome. However, claims 2-5 & 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over McElroy et al. U.S. Patent 4,657,829 in view of Breed et al. U.S. Patent 6,892,572.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 & 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over McElroy et al. U.S. Patent 4,657,829 in view of Breed et al. U.S. Patent 6,892,572.

Art Unit: 1745

With respect to claim 4, McElroy teaches an electrochemical cell system comprising: an electrochemical cell stack (40); a fluid containment vessel (44, 45) comprising a vessel inlet in fluid communication with a stack (40) outlet; and a vessel outlet (at 50) in fluid communication with the stack (40) inlet; wherein the vessel outlet comprises an outlet control device (52). See Figure 2. As to claim 5, the system further contains a float (48) translatably disposed in the fluid containment vessel. See Figure 2.

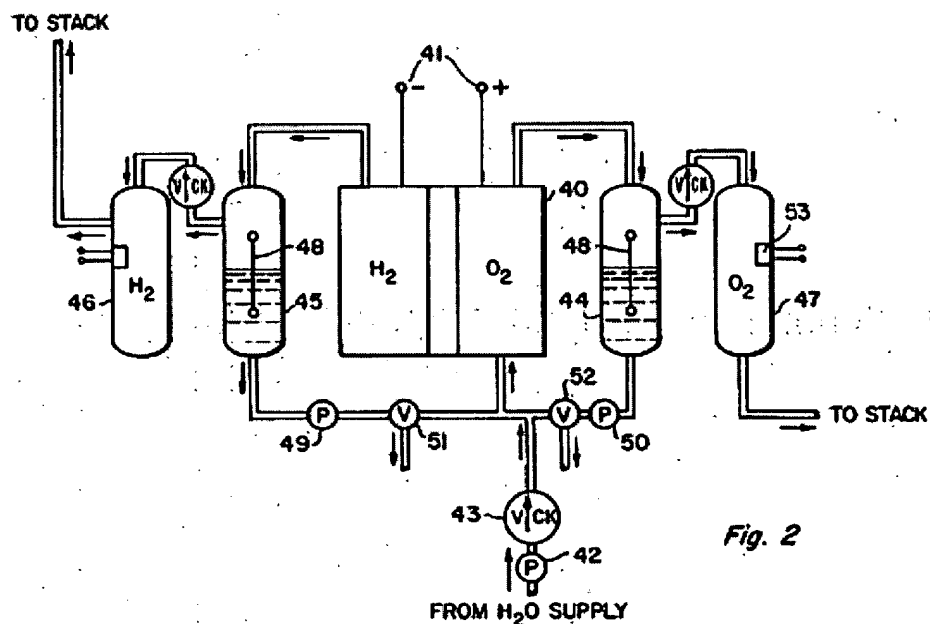


Fig. 2

McElroy does not expressly disclose: an inlet control device (claim 4); a load cell disposed in operable communication with the fluid containment vessel (claims 4 & 26); a second load cell (claim 2); or a load cell with a compressive force measurement device (claims 3 & 27) or tensile force measurement device (claim 4).

Breed teaches that it is conventional to employ load cells (claims 4 & 26) with tensile (claim 4) and compressive force (3 & 27) measurements to determine the weight of fuel reservoirs in fuel cell systems (col. 8, lines 1-10 and col. 10, lines 25-48). These measurement systems provide simple, low cost systems using a capacitance with a liquid as a dielectric to determine the level of the liquid in the reservoir (col. 4, lines 1-5) and improve accurate liquid level gage (col. 4, lines 20-25). With respect to claim 2, Breed teaches the use of multiple load cells (16). See Figure 1.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the load cell of Breed in the electrochemical system of McElory to provide low cost systems using a capacitance with a liquid as a dielectric to determine the level of the liquid in the reservoir and improve accurate liquid level gage (claim 4).

Concerning an inlet control device (claim 4), it would have been obvious to one of ordinary skill in the art to employ an inlet control device to manage inlet flow to the fluid containment vessel. As illustrated in McElory, the skilled artisan practices employing flow control devices throughout electrochemical systems.

With respect to claim 2, it would have been obvious to employ multiple load cells of Breed in the system of McElory, to accurately measure the weight

Art Unit: 1745

of fluid at different points throughout the system. Furthermore, the modification would have been obvious since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

### *Response to Arguments*

Applicant's arguments with respect to claim 5 under 35 U.S.C. 112 second paragraph are persuasive and the rejection is overcome. However, claims 2-5 & 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *McElroy et al.* U.S. Patent 4,657,829 in view of *Breed et al.* U.S. Patent 6,892,572.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Art Unit: 1745

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

12/5/06

  
PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER